

SEQUENCE LISTING

<110> GENEFIELD, INC.

<120> METHODS OF SCREENING FOR USEFUL PROTEINS (AS AMENDED)

<130> 2144.0330000

<150> JP 2003-205139

<151> 2003-07-31

<150> JP 2003-416228

<151> 2003-12-15

<160> 56

<170> PatentIn version 3.1

<210> 1

<211> 55

<212> DNA

<213> Artificial

<220>

<223> an artificially synthesized sequence

<220>

<221> modified\_base

<222> (20)..(20)

<223> Biotin is bonded to the 20th cytosine.

<400> 1

cccgggtgcag ctgtttcatc cggaaacagc tgcaccccccc gccgccccccc gtccct

55

<210> 2

<211> 36

<212> PRT

<213> Artificial

<220>

<223> an artificially synthesized sequence

<220>

<221> MISC\_FEATURE

<222> (1)..(4)

<223> "Xaa" = any amino acids.

<220>

<221> MISC\_FEATURE

<222> (6)..(8)

<223> "Xaa" = any amino acids.

<220>

<221> MISC\_FEATURE  
 <222> (10)..(12)  
 <223> "Xaa" = any amino acids.

<220>  
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 <222> (14)..(17)  
 <223> "Xaa" = any amino acids.

<220>  
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 <222> (19)..(22)  
 <223> "Xaa" = any amino acids.

<220>  
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 <222> (24)..(31)  
 <223> "Xaa" = any amino acids.

<220>  
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 <222> (33)..(36)  
 <223> "Xaa" = any amino acids.

<400> 2  
 Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa Xaa  
 1 5 10 15  
 Xaa Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys  
 20 25 30  
 Xaa Xaa Xaa Xaa  
 35

<210> 3  
 <211> 36  
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 <213> Artificial

<220>  
 <223> an artificially synthesized sequence

<220>  
 <221> MISC\_FEATURE  
 <222> (1)..(2)  
 <223> "Xaa" = any amino acids.

<220>  
 <221> MISC\_FEATURE  
 <222> (4)..(12)  
 <223> "Xaa" = any amino acids.

<220>  
 <221> MISC\_FEATURE

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<222> (14)..(15)
<223> "Xaa" = any amino acids.

<220>
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<222> (17)..(21)
<223> "Xaa" = any amino acids.

<220>
<221> MISC_FEATURE
<222> (23)..(27)
<223> "Xaa" = any amino acids.

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<221> MISC_FEATURE
<222> (29)..(31)
<223> "Xaa" = any amino acids.

<220>
<221> MISC_FEATURE
<222> (33)..(36)
<223> "Xaa" = any amino acids.

<400> 3
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Cys
1          5          10          15

Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys
          20          25          30

Xaa Xaa Xaa Xaa
          35

<210> 4
<211> 215
<212> DNA
<213> Artificial

<220>
<223> an artificially synthesized sequence

<220>
<221> misc_feature
<222> (71)..(82)
<223> "n" = a, t, g, or c.

<220>
<221> misc_feature
<222> (86)..(109)
<223> "n" = a, t, g, or c.

<220>
<221> misc_feature
<222> (113)..(124)

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<223> "n" = a, t, g, or c.

<220>

<221> misc\_feature

<222> (128)..(139)

<223> "n" = a, t, g, or c.

<220>

<221> misc\_feature

<222> (143)..(151)

<223> "n" = a, t, g, or c.

<220>

<221> misc\_feature

<222> (155)..(163)

<223> "n" = a, t, g, or c.

<220>

<221> misc\_feature

<222> (167)..(178)

<223> "n" = a, t, g, or c.

<400> 4

tttccccgcc ccccgctctg ctccgccgt gatgatgatg atgatggcct ccgcttgag  
60

ggcggaggg nnnnnnnnnn nnacannnnn nnnnnnnnnn nnnnnnnna cannnnnnnn  
120

nnnnacannn nnnnnnnna cannnnnnnn nacannnnn nnnacannnn nnnnnnnca  
180

tggtggcttg tagttgtaga atgtaaaatg taatg  
215

<210> 5

<211> 215

<212> DNA

<213> Artificial

<220>

<223> an artificially synthesized sequence

<220>

<221> misc\_feature

<222> (38)..(43)

<223> "n" = a, t, g, or c.

<220>

<221> misc\_feature

<222> (47)..(73)

<223> "n" = a, t, g, or c.

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<221> misc\_feature  
<222> (77)..(82)  
<223> "n" = a, t, g, or c.

<220>  
<221> misc\_feature  
<222> (86)..(100)  
<223> "n" = a, t, g, or c.

<220>  
<221> misc\_feature  
<222> (104)..(118)  
<223> "n" = a, t, g, or c.

<220>  
<221> misc\_feature  
<222> (122)..(130)  
<223> "n" = a, t, g, or c.

<220>  
<221> misc\_feature  
<222> (134)..(145)  
<223> "n" = a, t, g, or c.

<400> 5  
catggtggct tgtagtgtga gaatgtaaaa tgtaatgnnn nnntgtnnnn nnnnnnnnnn  
60

nnnnnnnnnn nnntgtnnnn nntgtnnnnnn nnnnnnnnnn tgtnnnnnnn nnnnnnnntg  
120

tnnnnnnnnn tgtnnnnnnn nnnnnccctc cgccctcca agcggaggcc atcatcatca  
180

tcatcacggc ggaagcagga cggggggcgg ggaaa  
215

<210> 6  
<211> 37  
<212> DNA  
<213> Artificial

<220>  
<223> an artificially synthesized primer sequence

<400> 6  
cattacattt tacattctac aactacaagc caccatg  
37

<210> 7  
<211> 19  
<212> DNA  
<213> Artificial

<220>  
<223> an artificially synthesized primer sequence

<400> 7  
tttccccgcc ccccgctct  
19

<210> 8  
<211> 117  
<212> DNA  
<213> Artificial

<220>  
<223> an artificially synthesized primer sequence

<400> 8  
gatccccgca aattaatacg actcactata ggggaagtat tttacaaca attaccaaca  
60

acaacaacaa acaacaacaa cattacattt tacattctac aactacaagc caccatg  
117

<210> 9  
<211> 19  
<212> DNA  
<213> Artificial

<220>  
<223> an artificially synthesized primer sequence

<400> 9  
aggacggggg gcggggaaa  
19

<210> 10  
<211> 40  
<212> DNA  
<213> Artificial

<220>  
<223> an artificially synthesized primer sequence

<400> 10  
caacaacatt acattttaca ttctacaact acaagccacc  
40

<210> 11  
<211> 19  
<212> DNA  
<213> Artificial

<220>  
 <223> an artificially synthesized primer sequence

<400> 11  
 tttccccgcc ccccgctcct  
 19

<210> 12  
 <211> 117  
 <212> DNA  
 <213> Artificial

<220>  
 <223> an artificially synthesized sequence

<400> 12  
 gatccccgca aattaatacg actcactata ggggaagtat tttacaaca attaccaaca  
 60  
 acaacaacaa acaacaacaa cattacattt tacattctac aactacaagc caccatg  
 117

<210> 13  
 <211> 114  
 <212> DNA  
 <213> Artificial

<220>  
 <223> an artificially synthesized sequence

<220>  
 <221> misc\_feature  
 <222> (33)..(89)  
 <223> "nnn" is repeated 19 times. In the "nnn", 1st n indicates  
 mixture of 13% T, 20% C, 35% A, 32% G, 2nd n indicates mixture of  
 24% T, 22% C, 30% A, 24% G, and 3rd n indicates mixture of 37% T,  
 37% C, 0% A, 26% G

<400> 13  
 acattctaca actacaagcc accatgggat gtannnnnnnnn nnnnnnnnnnnn nnnnnnnnnnn  
 60  
 nnnnnnnnnnnn nnnnnnnnnnnn nnnnnnnnnnt gtgagggggg aggcagccat catc  
 114

<210> 14  
 <211> 61  
 <212> DNA

<213> Artificial

<220>

<223> an artificially synthesized sequence

<400> 14

tttccccgcc gccccccgtc ctgcttccgc cgtgatgatg atgatgatgg ctgcctcccc  
60

c

61

<210> 15

<211> 247

<212> DNA

<213> Artificial

<220>

<223> an artificially synthesized sequence

<220>

<221> misc\_feature

<222> (124)..(180)

<223> "nnn" is repeated 19 times. In the "nnn", 1st n indicates  
mixtur

e of 13% T, 20% C, 35% A, 32% G, 2nd n indicates mixture of  
24% T

, 22% C, 30% A, 24% G, and 3rd n indicates mixture of 37% T,  
37%

C, 0% A, 26% G

<400> 15

gatccccgca aattaatacg actcactata ggggaagtat ttttacaaca attaccaaca  
60

acaacaacaa acaacaacaa cattacattt tacattctac aactacaagc caccatggga  
120

tgtnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn  
180

tgtgaggggg gaggcagcca tcatcatcat catcacggcg gaagcaggac ggggggcggc  
240

ggggaaa

247

<210> 16

<211> 40

<212> DNA

<213> Artificial

<220>



<223> an artificially synthesized primer sequence

<400> 16

caacaacatt acattttaca ttctacaact acaagccacc

40

<210> 17

<211> 39

<212> DNA

<213> Artificial

<220>

<223> an artificially synthesized primer sequence

<400> 17

tttccccgcc gccccccgtc ctgcttccgc cgtgatgat

39

<210> 18

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 18

Met	Gly	Cys	Ser	Cys	Gly	Met	Leu	Cys	Thr	His	Val	Arg	His	His	Ser
1				5					10					15	

Arg	Phe	His	Met	Val	His
			20		

<210> 19

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 19

Met	Gly	Cys	Ser	Asp	Ser	Ala	Arg	Val	Pro	Leu	Gly	Met	Ala	Val	Cys
1				5					10					15	

Val	Thr	Ser	Ser	Ala	Ile
				20	

<210> 20

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 20

Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
1 5 10 15

Arg Phe His Met Val His  
20

<210> 21

<211> 19

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 21

Met Arg Ile Ser Arg Pro Val Met Asn Glu Gly Arg Trp Leu Ile Tyr  
1 5 10 15

Leu Leu Ser

<210> 22

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 22

Met Gly Arg Ser Val His Phe Gly Leu Gln Cys Gly Asn Met Gly His  
1 5 10 15

Val His Asp Ser Ile His  
20

<210> 23

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 23

Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser

1 5 10 15

Arg Phe His Met Ala Asn  
20

<210> 24  
<211> 22  
<212> PRT  
<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 24

Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
1 5 10 15

His Phe His Met Val His  
20

<210> 25  
<211> 22  
<212> PRT  
<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 25

Met Gly Cys Thr Leu Val Gly Ser Gly Asn Pro Asn Val Gly Ser Val  
1 5 10 15

Ile His Leu His Cys His  
20

<210> 26  
<211> 22  
<212> PRT  
<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 26

Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
1 5 10 15

Arg Phe His Met Val His  
20

<210> 27

<211> 22  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> A peptide sequence encoded by selected DNA.  
  
 <400> 27  
 Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
 1 5 10 15  
  
 Arg Phe His Met Val His  
 20

<210> 28  
 <211> 22  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> A peptide sequence encoded by selected DNA.  
  
 <400> 28  
 Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
 1 5 10 15  
  
 Arg Phe His Met Val His  
 20

<210> 29  
 <211> 22  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> A peptide sequence encoded by selected DNA.  
  
 <220>  
 <221> MISC\_FEATURE  
 <222> (19)..(19)  
 <223> "Xaa" = The site corresponding to termination codon.  
  
 <400> 29  
 Met Gly Cys Cys Asn Ser Thr Gly Val Val Val Gly Val Leu Phe Gly  
 1 5 10 15  
  
 Pro Asp Xaa Met His Cys  
 20

<210> 30  
 <211> 22  
 <212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 30

Met Gly Cys Ser Val His Phe Gly Leu Gln Cys Gly Asn Met Gly His  
1 5 10 15

Val His Asp Ser Ile His  
20

<210> 31

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 31

Met Gly Cys Ser Ser Met Ser Ser Val His Met Cys Phe Cys Pro Ala  
1 5 10 15

Gly Arg Asp Val Ile Ser  
20

<210> 32

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 32

Met Gly Cys Ile Thr Phe Ile Gly Glu Cys Gly Arg Phe Val Asp Gly  
1 5 10 15

Gly Cys Phe Asn Asn Asn  
20

<210> 33

<211> 22

<212> PRT

<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 33

Met Gly Cys Arg Ala Arg Gly Val Gly Val Asp Tyr Ile Ser Arg Arg

1	5	10	15
---	---	----	----

Asp His Lys Ser His His  
20

<210> 34  
 <211> 22  
 <212> PRT  
 <213> Artificial

<220>  
 <223> A peptide sequence encoded by selected DNA.

<400> 34  
 Met Gly Cys Asp Leu Gln Arg Val Gly Cys Ala Val Ser Ala Thr Val  
 1 5 10 15

Glu Thr Cys Gly Asn Ser  
20

<210> 35  
 <211> 22  
 <212> PRT  
 <213> Artificial

<220>  
 <223> A peptide sequence encoded by selected DNA.

<400> 35  
 Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
 1 5 10 15

Arg Phe His Met Val His  
20

<210> 36  
 <211> 22  
 <212> PRT  
 <213> Artificial

<220>  
 <223> A peptide sequence encoded by selected DNA.

<400> 36  
 Met Gly Cys Ser Val His Phe Gly Leu Gln Cys Gly Asn Met Gly His  
 1 5 10 15

Val His Asp Ser Ile His  
20

<210> 37

<211> 22  
<212> PRT  
<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 37

Met Gly Cys Thr Leu Val Gly Ser Gly Asn Pro Asn Val Gly Ser Val  
1 5 10 15

Ile His Leu His Cys His  
20

<210> 38  
<211> 22  
<212> PRT  
<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 38

Met Gly Cys Ser Val His Phe Gly Leu Gln Cys Gly Asn Met Gly His  
1 5 10 15

Val His Asp Ser Ile His  
20

<210> 39  
<211> 22  
<212> PRT  
<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 39

Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
1 5 10 15

Arg Phe His Met Val His  
20

<210> 40  
<211> 22  
<212> PRT  
<213> Artificial

<220>

<223> A peptide sequence encoded by selected DNA.

<400> 40  
Met Gly Cys Ser Cys Gly Met Leu Arg Thr His Val Arg His His Ser  
1 5 10 15

Arg Phe His Met Val His  
20

<210> 41  
<211> 22  
<212> PRT  
<213> Artificial

<220>  
<223> A peptide sequence encoded by selected DNA.

<400> 41  
Met Gly Cys Ile Ser Ala Gly Asp Ser Val Cys Val Thr Asp Asn Val  
1 5 10 15

Asp Leu Pro Ser Asn Thr  
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<210> 42  
<211> 22  
<212> PRT  
<213> Artificial

<220>  
<223> A peptide sequence encoded by selected DNA.

<400> 42  
Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
1 5 10 15

Arg Phe His Met His Arg  
20

<210> 43  
<211> 19  
<212> PRT  
<213> Artificial

<220>  
<223> A peptide sequence encoded by selected DNA.

<400> 43  
Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser Arg Phe His  
1 5 10 15

Met Val His



<210> 44  
 <211> 19  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> A peptide sequence encoded by selected DNA.  
  
 <400> 44  
 Ser Val His Phe Gly Leu Gln Cys Gly Asn Met Gly His Val His Asp  
 1 5 10 15

Ser Ile His

<210> 45  
 <211> 19  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> A peptide sequence encoded by selected DNA.  
  
 <400> 45  
 Thr Leu Val Gly Ser Gly Asn Pro Asn Val Gly Ser Val Ile His Leu  
 1 5 10 15

His Cys His

<210> 46  
 <211> 8  
 <212> PRT  
 <213> Artificial  
  
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 <223> an artificially synthesized peptide linker sequence.  
  
 <400> 46  
 Gly Gly Gly Ser Gly Gly Gly Ser  
 1 5

<210> 47  
 <211> 31  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> an artificially synthesized peptide sequence.  
  
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<221> MISC\_FEATURE  
 <222> (31)..(31)  
 <223> "Xaa" indicates Glutathione S-Transferase.

<400> 47  
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 1 5 10 15  
 Arg Phe His Met Val His Gly Gly Gly Ser Gly Gly Gly Ser Xaa  
 20 25 30

<210> 48  
 <211> 31  
 <212> PRT  
 <213> Artificial

<220>  
 <223> an artificially synthesized peptide sequence.

<220>  
 <221> MISC\_FEATURE  
 <222> (31)..(31)  
 <223> "Xaa" indicates His-tag.

<400> 48  
 Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
 1 5 10 15  
 Arg Phe His Met Val His Gly Gly Gly Ser Gly Gly Gly Ser Xaa  
 20 25 30

<210> 49  
 <211> 105  
 <212> DNA  
 <213> Artificial

<220>  
 <223> an artificially synthesized sequence.

<400> 49  
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 60  
 catatggtgc acggtggtgg atctggtgga gggctctcgaa ttcta  
 105

<210> 50  
 <211> 105  
 <212> DNA  
 <213> Artificial

<220>  
 <223> an artificially synthesized sequence.

<400> 50  
tagaattcga gaccctccac cagatccacc accgtgcacc atatggaatc gtgaatgatg  
60  
ccgaacatgt gtgcatagca tgccacatga gcaaccggat ccccc  
105

<210> 51  
<211> 106  
<212> DNA  
<213> Artificial

<220>  
<223> an artificially synthesized sequence.

<400> 51  
actggatccg gttgctcatg tggcatgcta tgcacacatg ttcggcatca ttcacgattc  
60  
catatggtgc acggtggtgg atctggtgga gggctctcaag cttaat  
106

<210> 52  
<211> 106  
<212> DNA  
<213> Artificial

<220>  
<223> an artificially synthesized sequence.

<400> 52  
attaagcttg agaccctcca ccagatccac caccgtgcac catatggaat cgtgaatgat  
60  
gccgaacatg tgtgcatagc atgccacatg agcaaccgga tccagt  
106

<210> 53  
<211> 22  
<212> PRT  
<213> Artificial

<220>  
<223> an artificially synthesized peptide sequence.

<400> 53  
Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
1 5 10 15  
Arg Phe His Met Val His  
20

<210> 54

<211> 22  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> an artificially synthesized peptide sequence.  
  
 <220>  
 <221> MISC\_FEATURE  
 <222> (3)..(3)  
 <223> "Cys" indicates the cysteine that binds to 9th amino acid  
 "Cys" by S-S bond.  
  
 <220>  
 <221> MISC\_FEATURE  
 <222> (9)..(9)  
 <223> "Cys" indicates the cysteine that binds to 3rd amino acid  
 "Cys" by S-S bond.  
  
 <400> 54  
 Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
 1 5 10 15  
  
 Arg Phe His Met Val His  
 20

<210> 55  
 <211> 22  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> an artificially synthesized peptide sequence.  
  
 <220>  
 <221> MISC\_FEATURE  
 <222> (3)..(3)  
 <223> "Cys" indicates the cysteine that binds to 5th amino acid  
 "Cys" by S-S bond.  
  
 <220>  
 <221> MISC\_FEATURE  
 <222> (5)..(5)  
 <223> "Cys" indicates the cysteine that binds to 3rd amino acid  
 "Cys" by S-S bond.  
  
 <400> 55  
 Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser  
 1 5 10 15  
  
 Arg Phe His Met Val His  
 20

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<210> 56
<211> 22
<212> PRT
<213> Artificial

<220>
<223> an artificially synthesized peptide sequence.

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> "Cys" indicates the cysteine that binds to 9th amino acid
"Cys" by S-S bond.

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> "Cys" indicates the cysteine that binds to 5th amino acid
"Cys" by S-S bond.

<400> 56
Met Gly Cys Ser Cys Gly Met Leu Cys Thr His Val Arg His His Ser
1          5          10          15
Arg Phe His Met Val His
20

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